Lesson Topic 1.3

WATERTIGHT CLOSURES COMPONENT PARTS

Introduction

Watertight closures contain various working and fixed parts. In order to inspect, maintain or repair these closures, it is imperative that you become thoroughly familiar with these parts.

ENABLING OBJECTIVES

- Describe the Watertight Closures component parts in accordance with DAMAGE CONTROL WATERTIGHT CLOSURES INSPECTION, MAINTENANCE AND REPAIR BOOKLET and PMS requirements

Watertight/Airtight Knife Edge and Door Assembly

A. Knife edge

(1) The door frames raised metal edge that seats the gasket.

B. Gasket retainer

(1) A square or U-shape trough welded to the door.

C. Door frame

(1) Bolted or welded to bulkhead.

Watertight/Airtight Knife Edge and Door Assembly

D. Gasket(s)

(1) different sizes and materials for application.

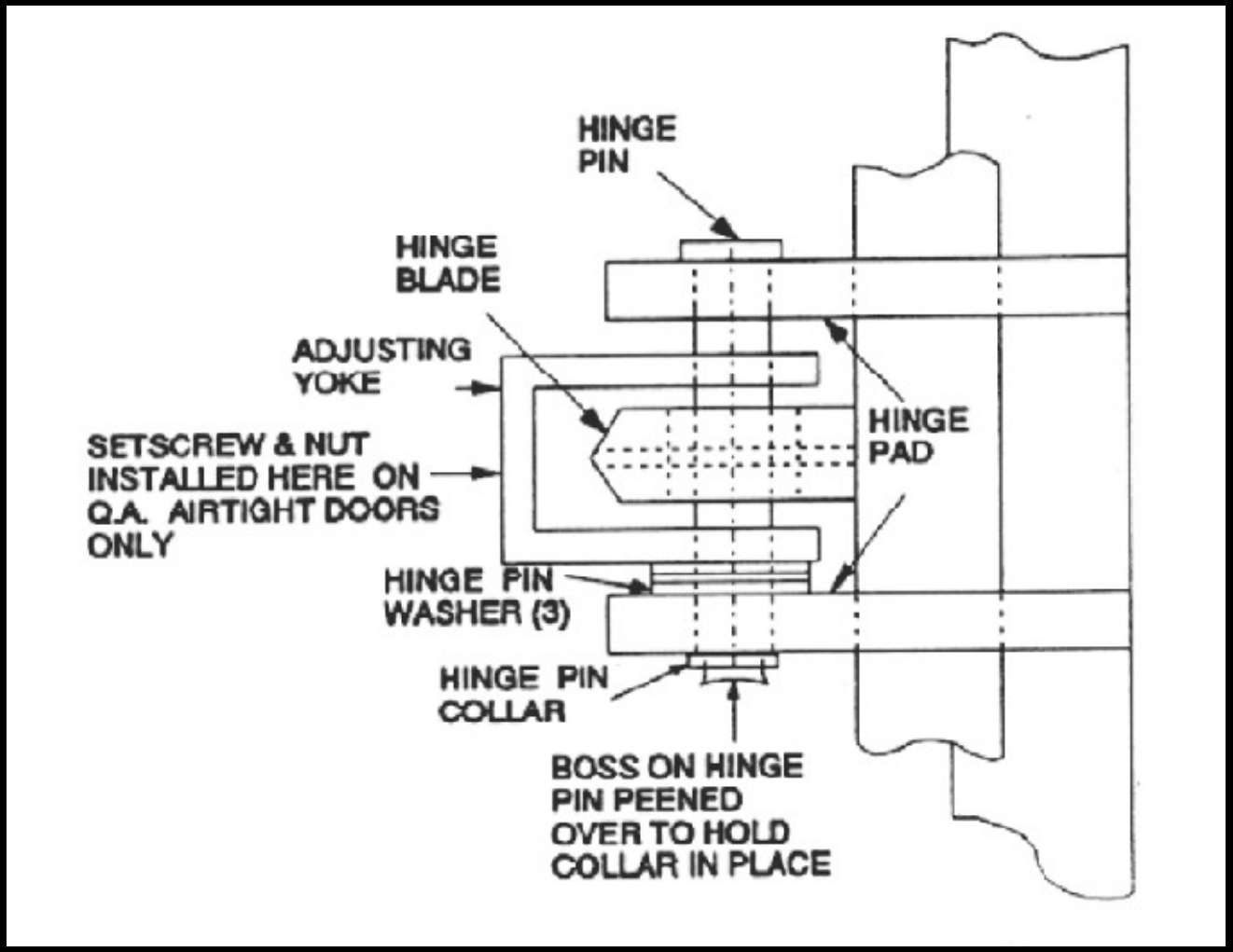
(a) MIL-R-900 RUBBER

(b) ZZ-R-765 SILICONE

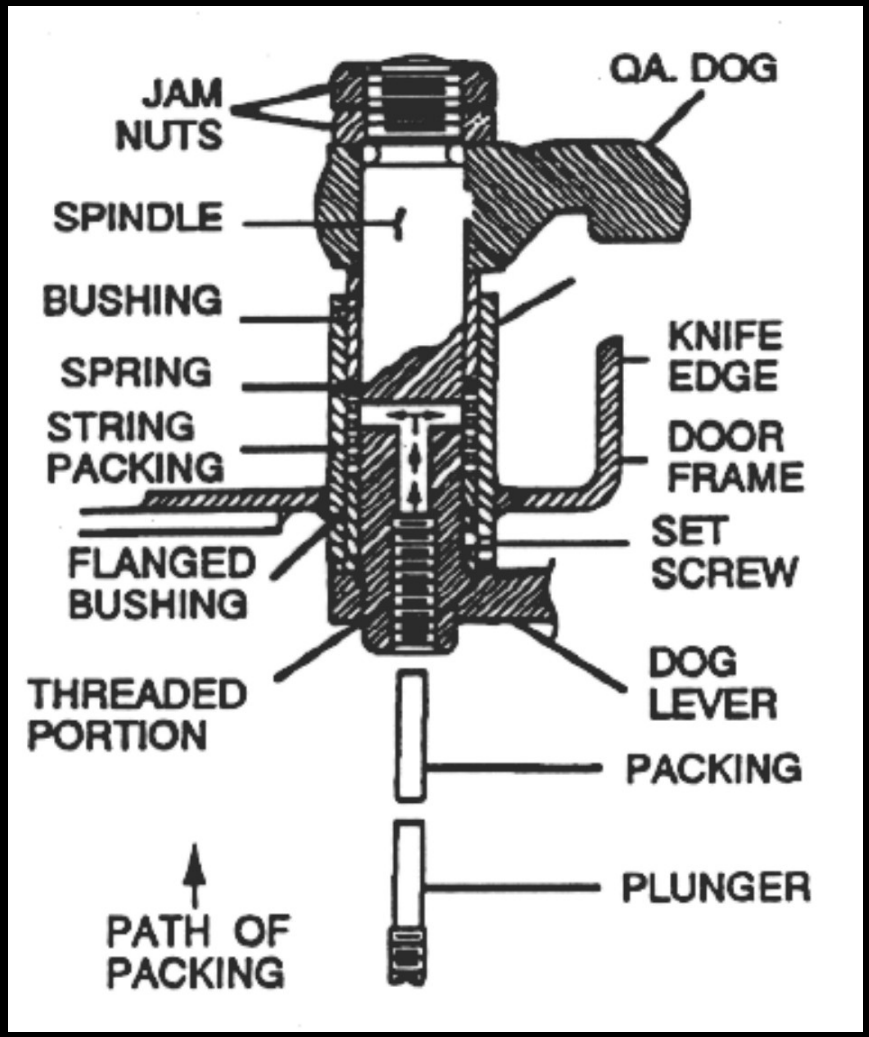
E. Spindle sleeves

(1) Welded to the frame

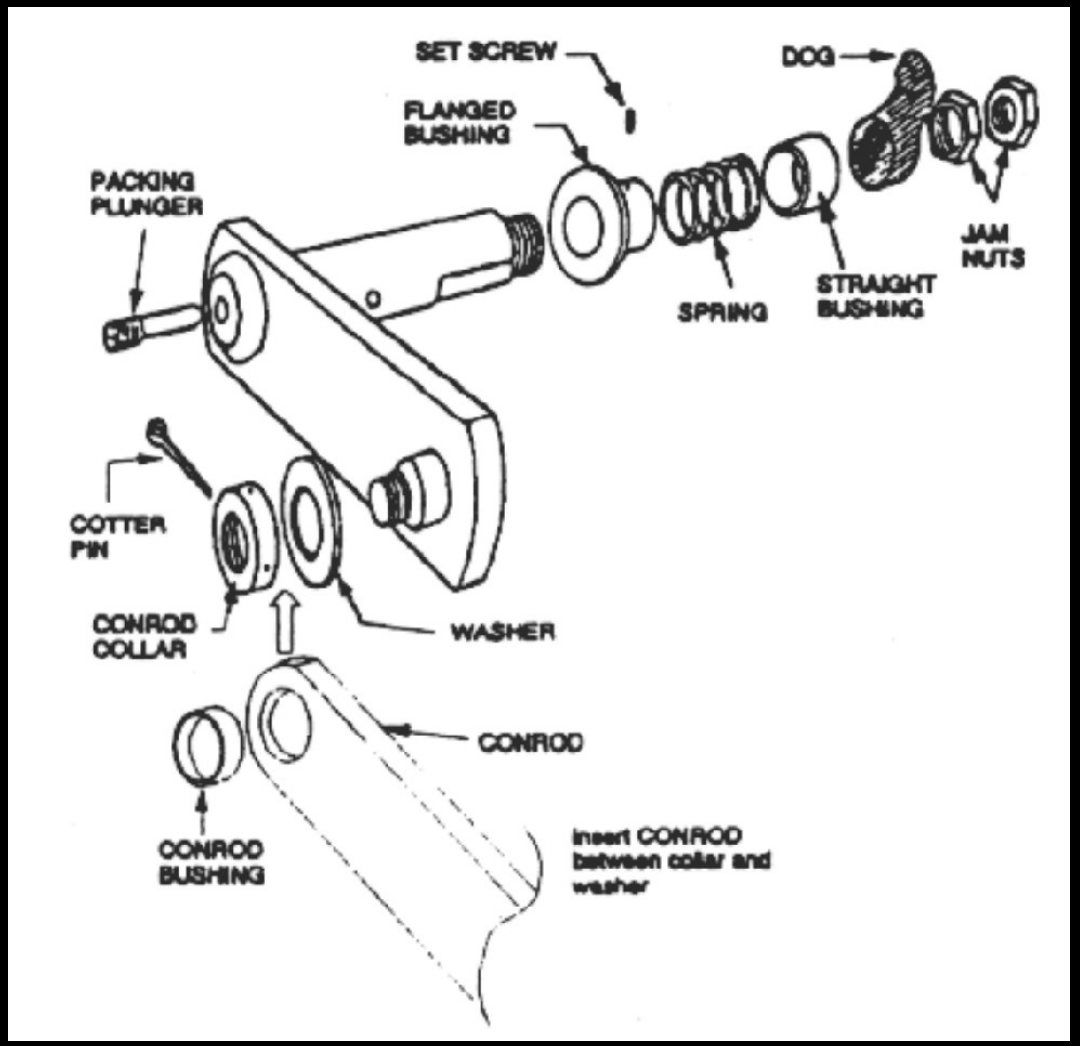
Hinge Assembly


HINGE PIN
HINGE BLADE
ADJUSTING YOKE
SETSCREW & NUT INSTALLED HERE ON Q.A. AIRTIGHT DOORS ONLY
HINGE PAD
HINGE PIN WASHER (3)
HINGE PIN COLLAR
BOSS ON HINGE PIN PEENED OVER TO HOLD COLLAR IN PLACE

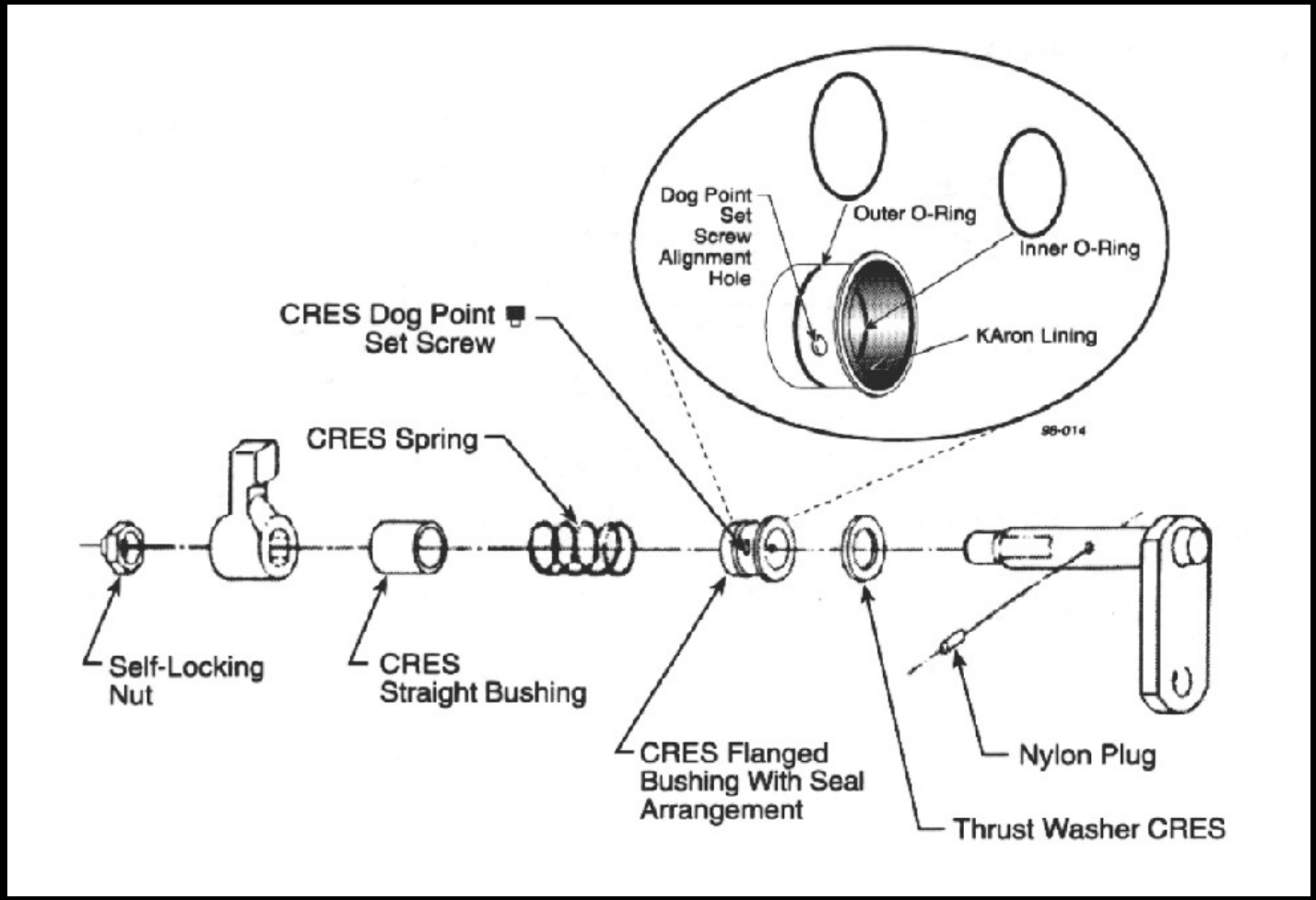
Quick Acting Door Assembly (Standard Bronze Bushing Components)



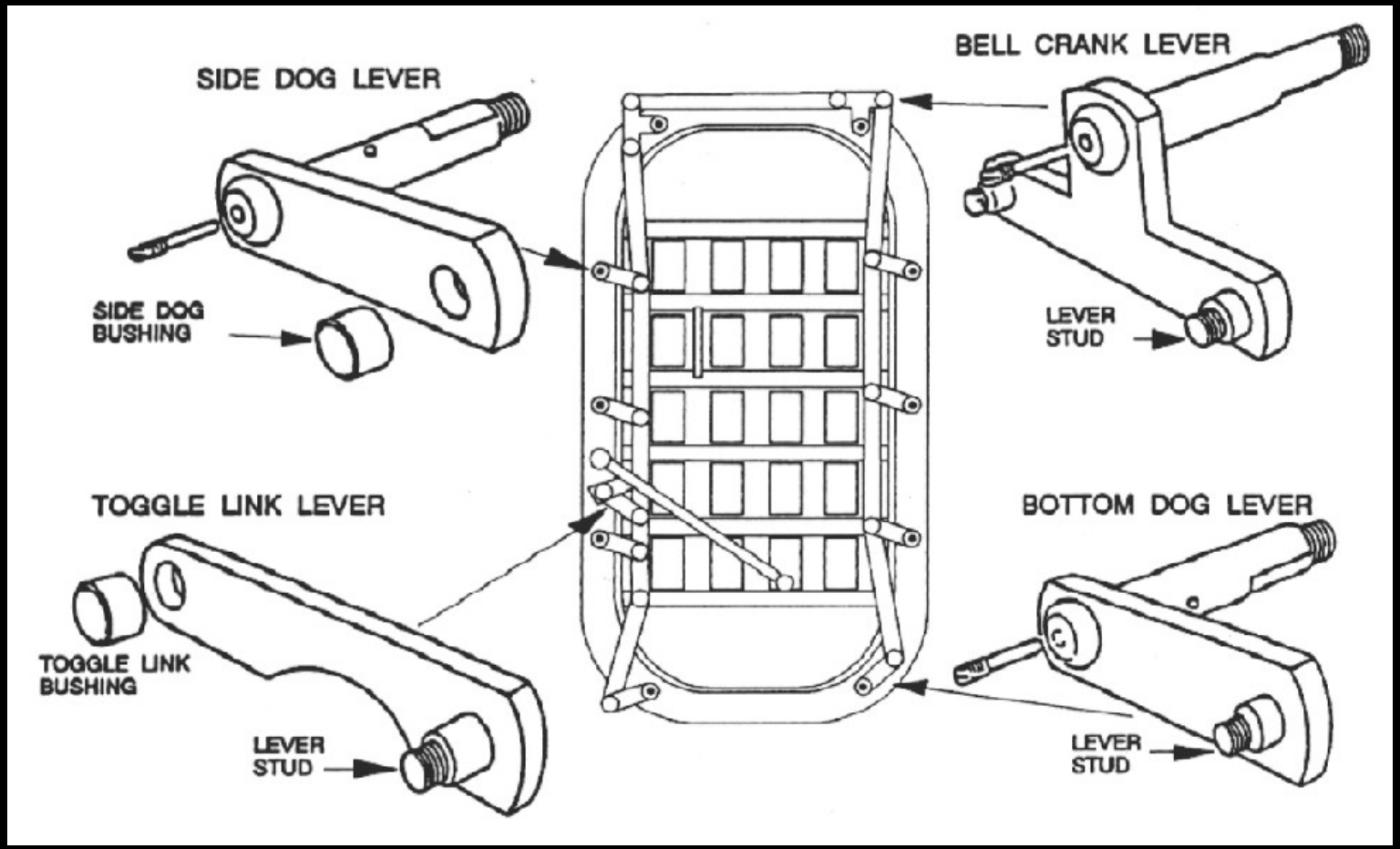
Quick Acting Door Assembly (Standard Bronze Bushing Components)



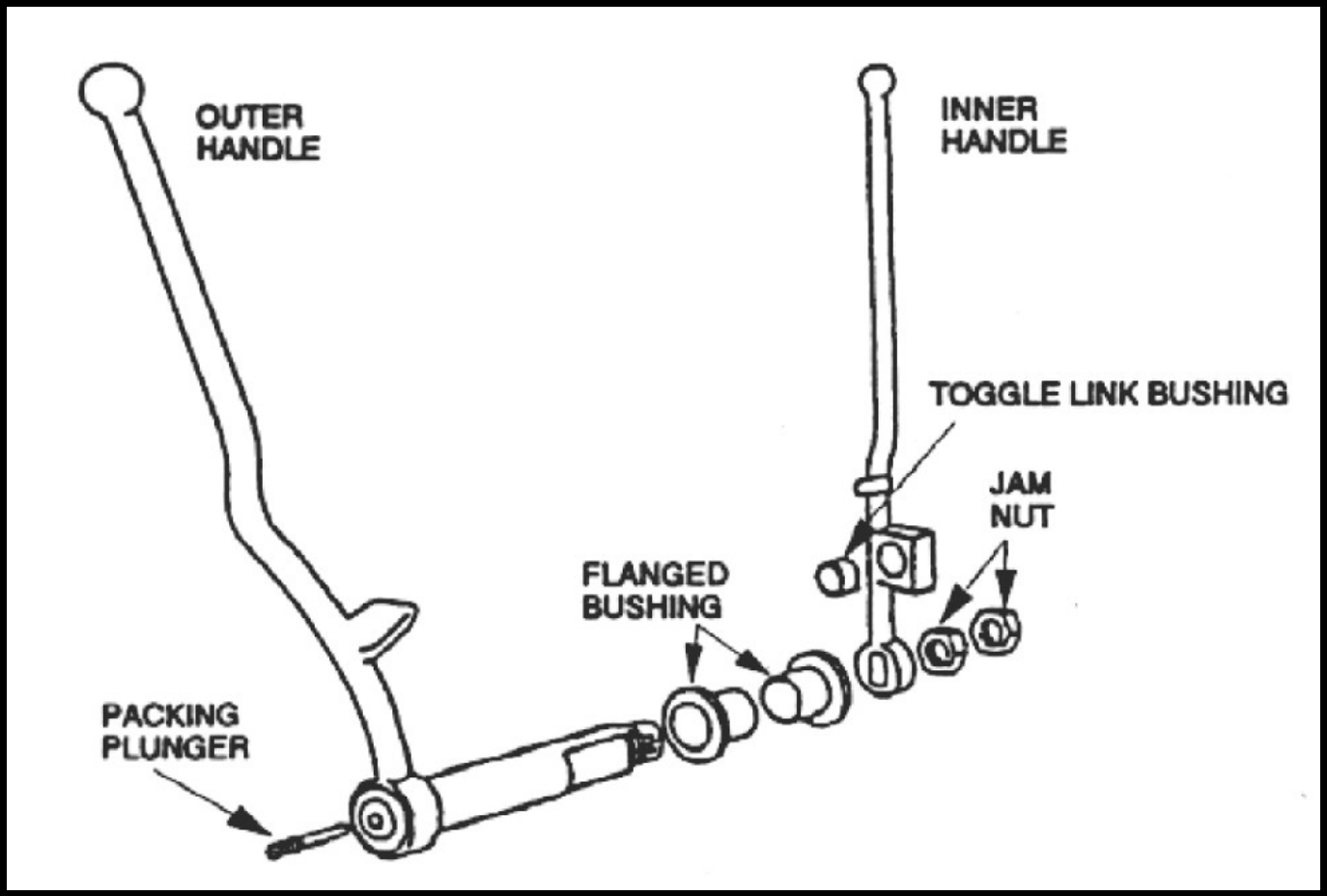
Quick Acting Door Dog Assembly (Kamatic [Self Lubricating] Bushing Components)

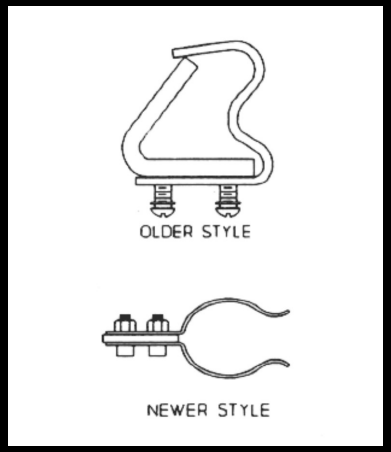


Quick Acting Door Linkage Levers and Connecting Rods



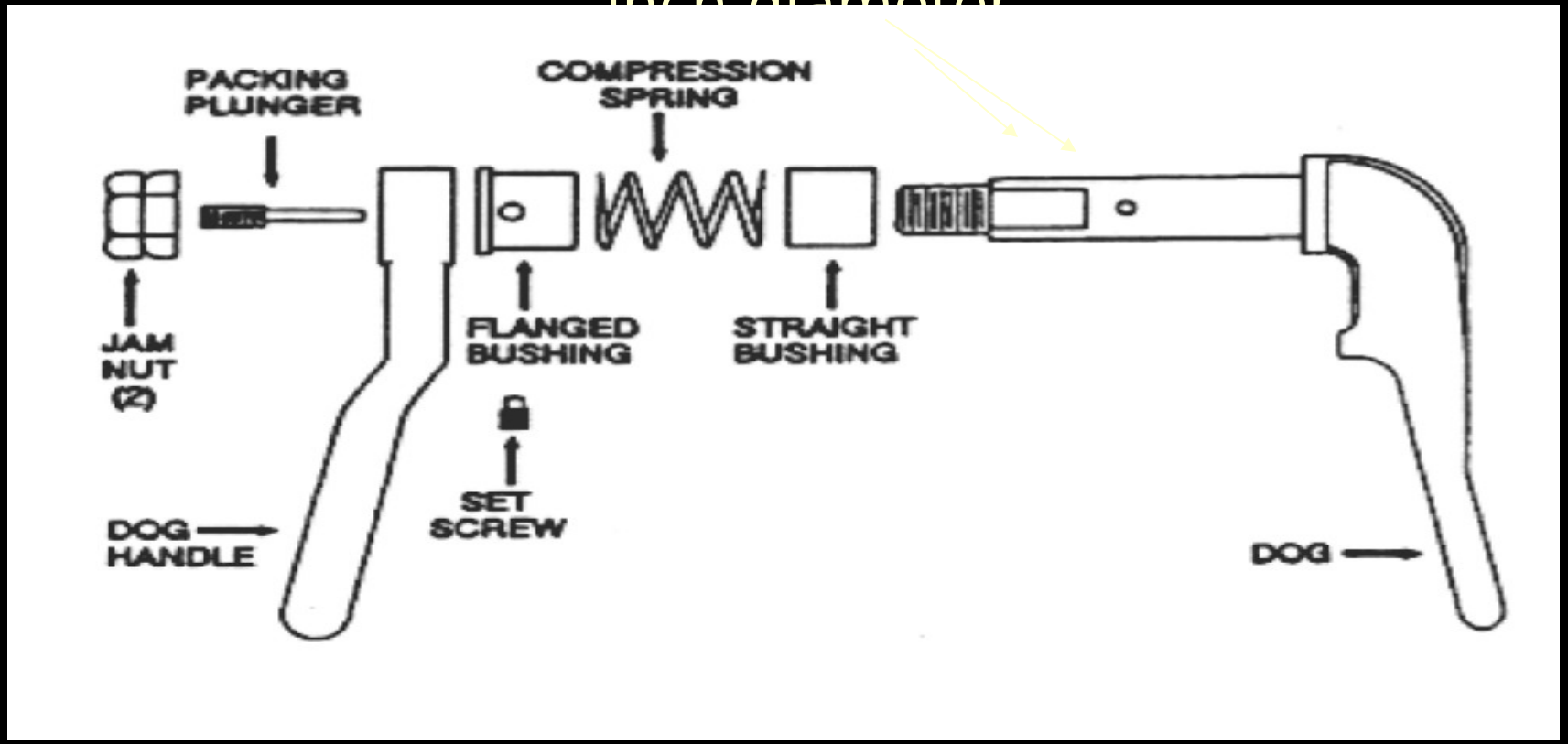
Quick Acting Handle Assembly



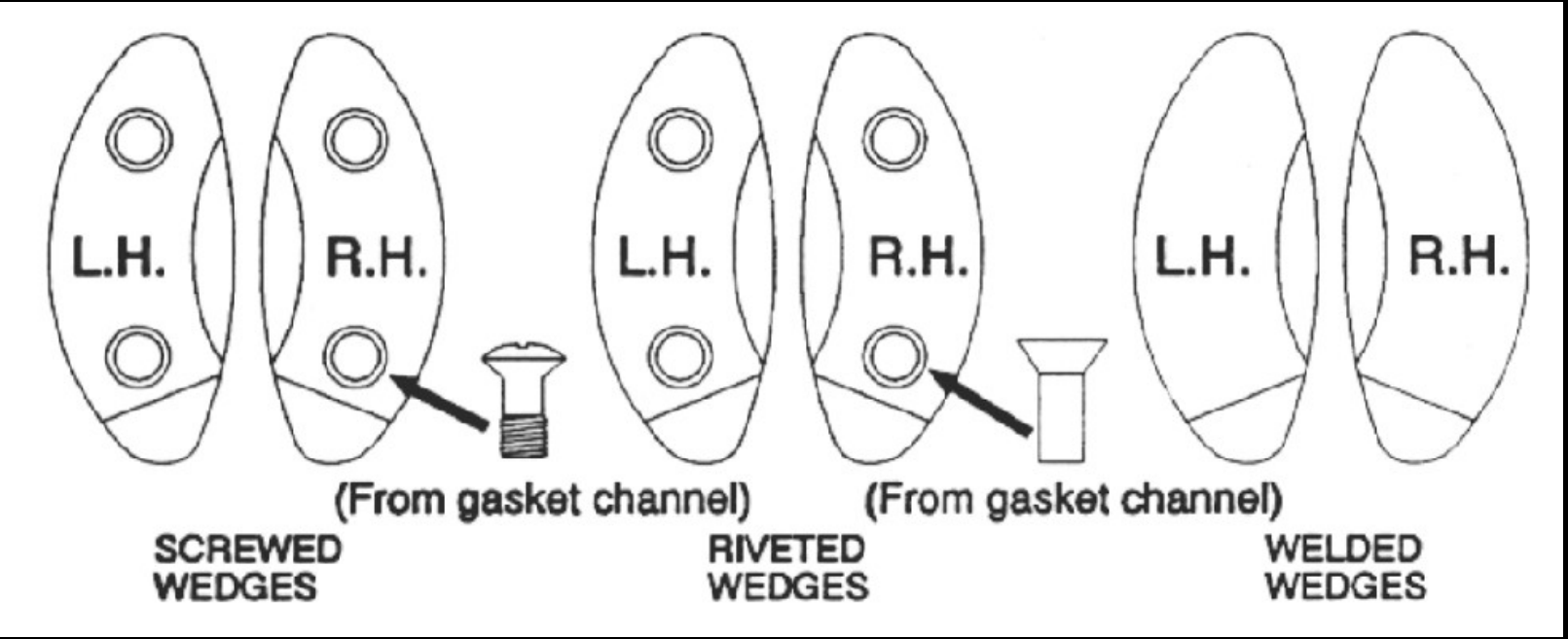


Individually Dogged Watertight Door Dog Assembly

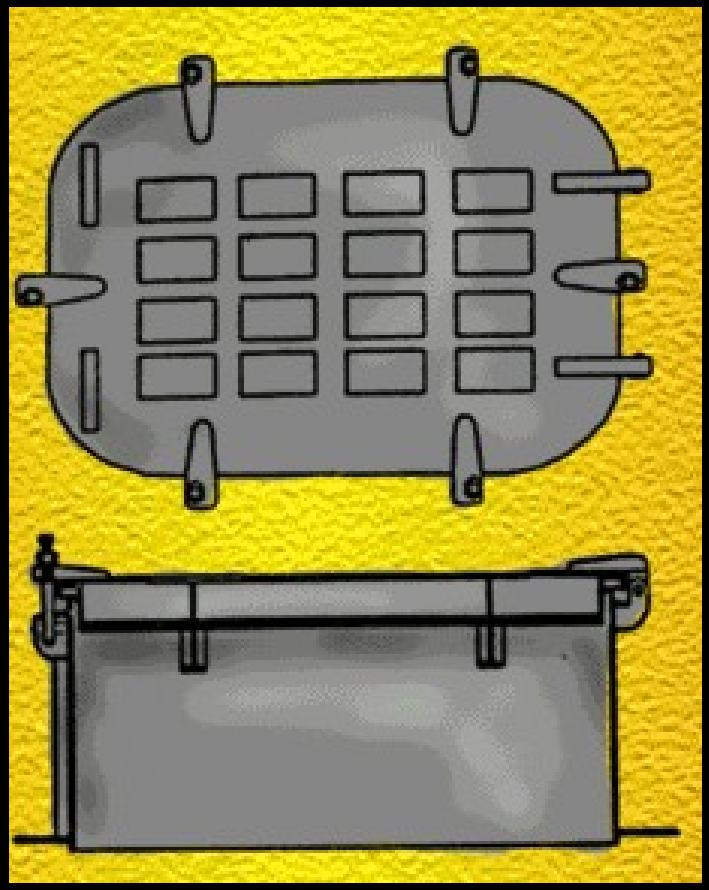
Fixed spindle, Flanged bushing, and Straight bushing come in two sizes 1 inch and 1 1/8-inch diameter



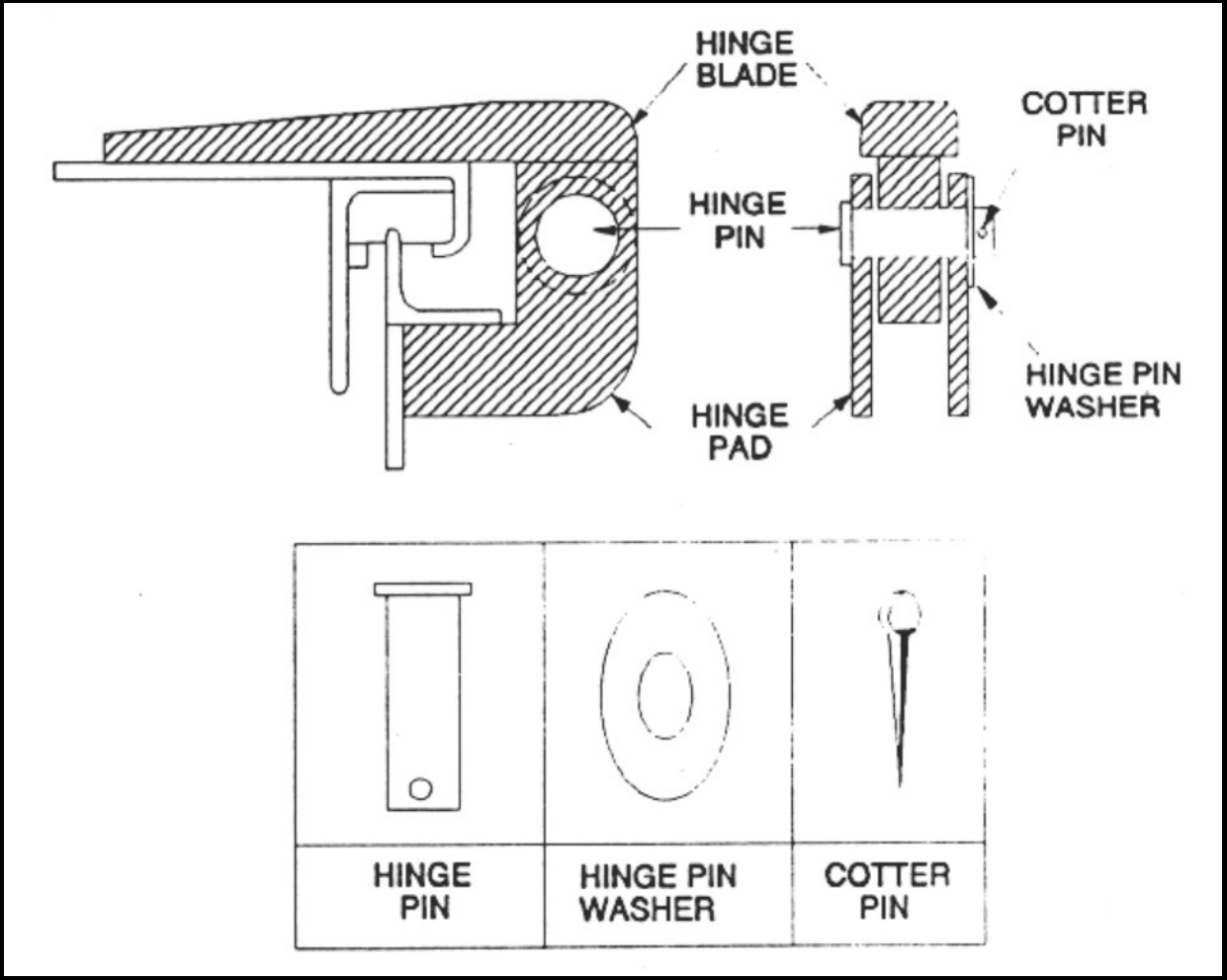
Wedges (RH/LH)


L.H.
R.H.
L.H.
R.H.
L.H.
R.H.
(From gasket channel)
(From gasket channel)
SCREWED WEDGES
RIVETED WEDGES
WELDED WEDGES

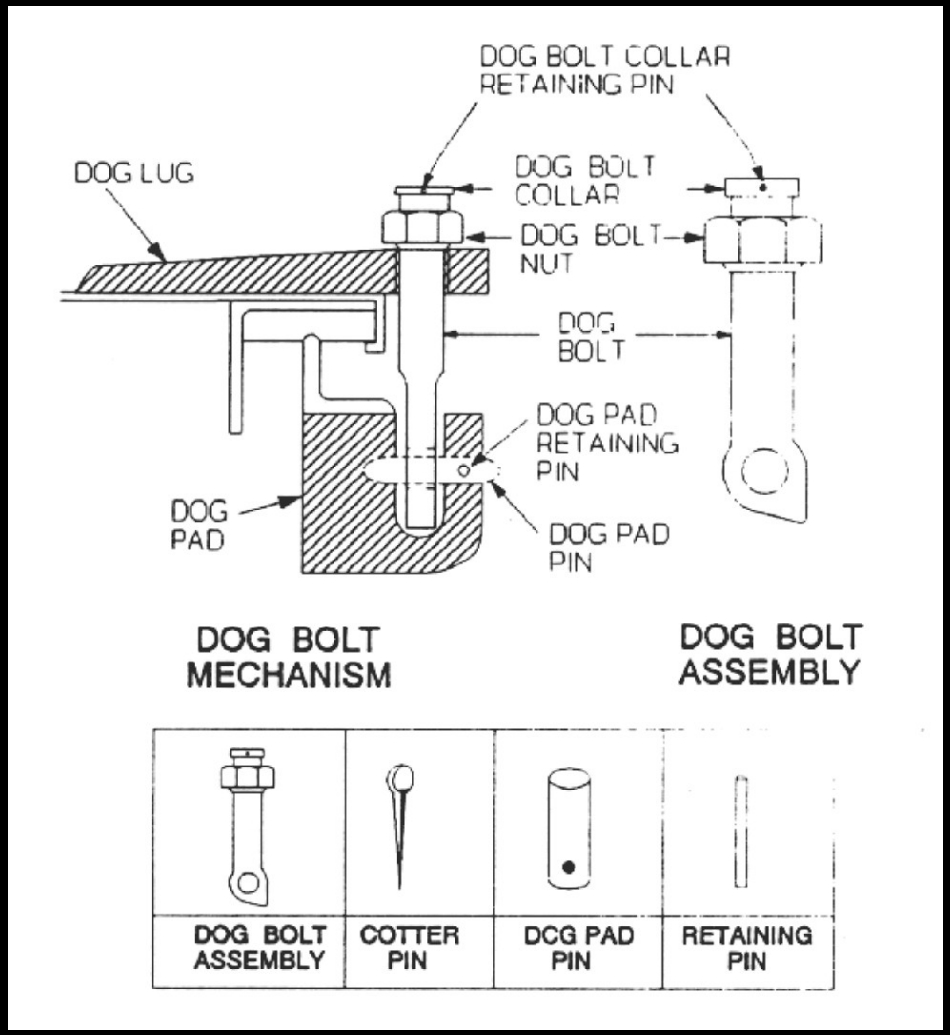
Raised Watertight Hatch (Individually dogged)



Hinge assembly

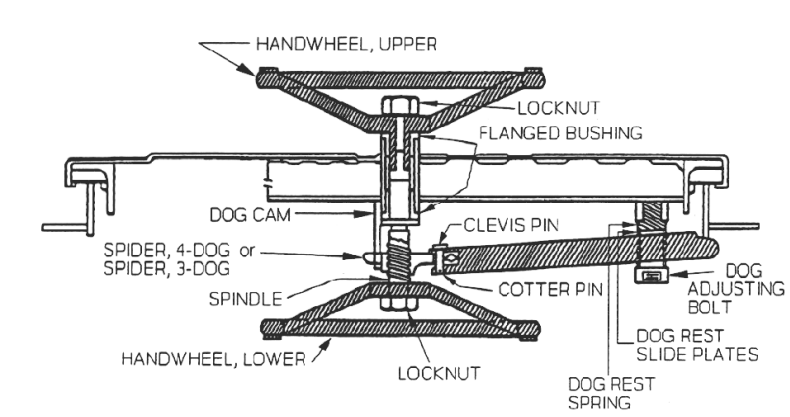


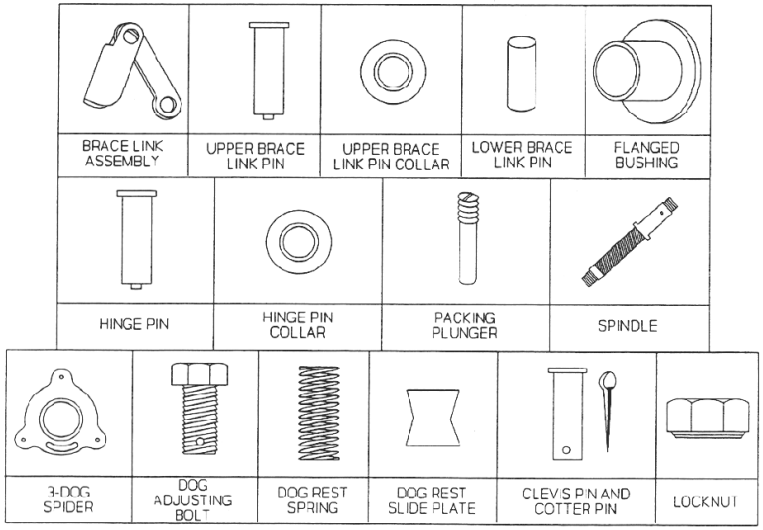
Dog bolt assembly



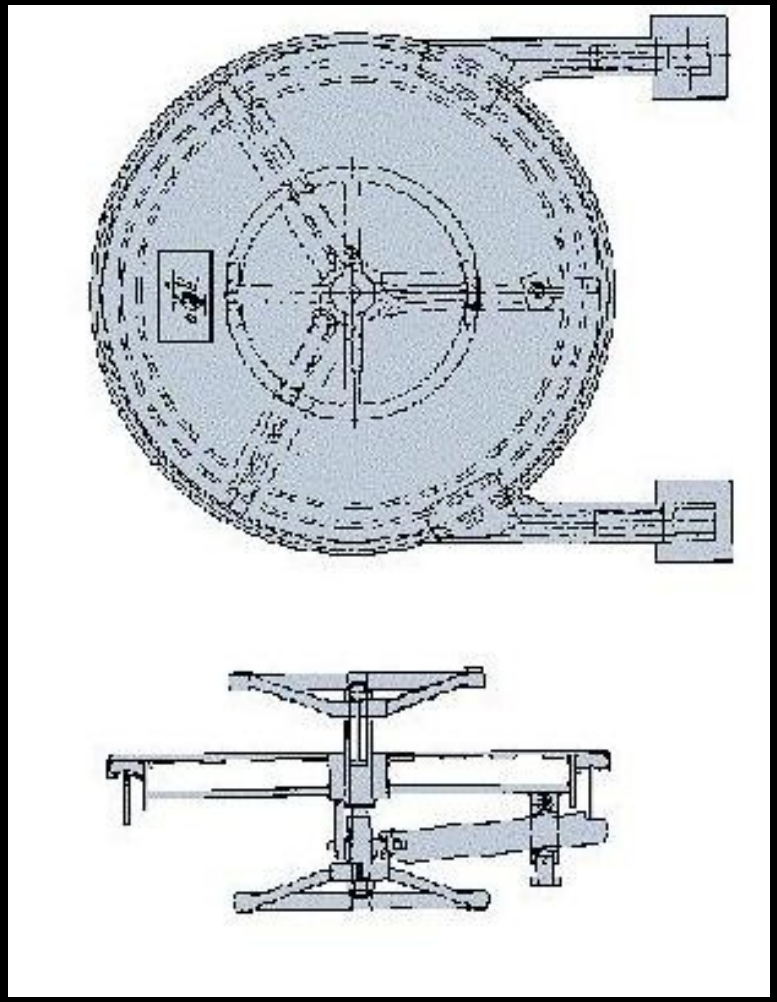
Raised Quick Acting Watertight Scuttle

Parts

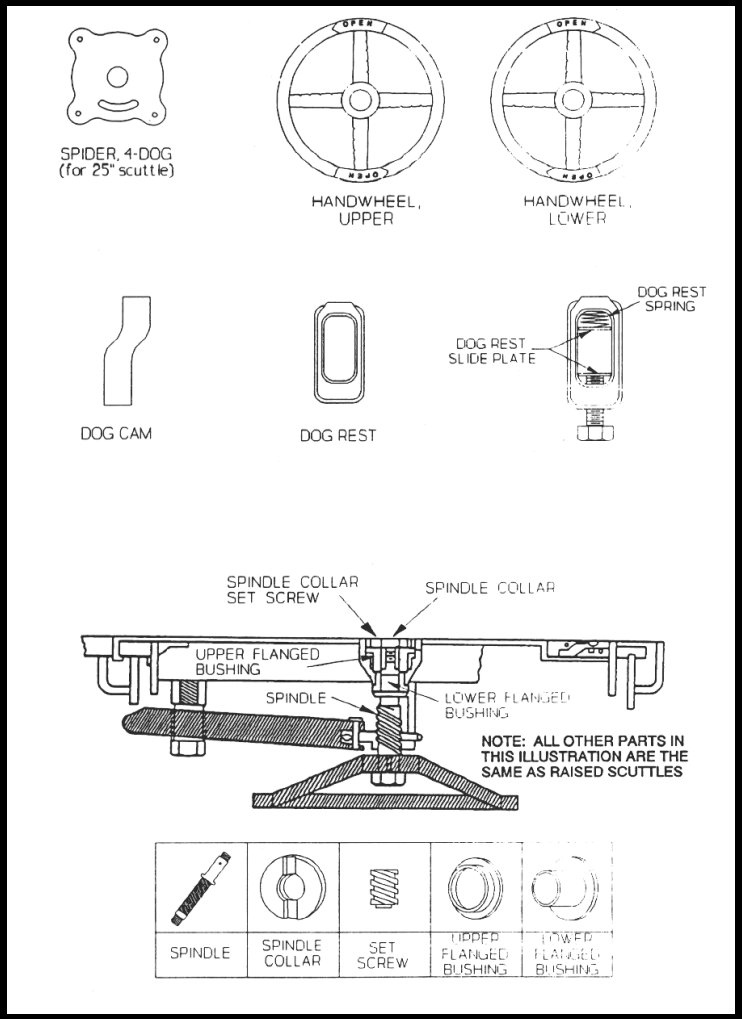

HANDWHEEL, UPPER
LOCKNUT
FLANGED BUSHING
DOG CAM
CLEVIS PIN
SPIDER, 4-DOG or
SPIDER, 3-DOG
DOG
ADJUSTING
BOLT
SPINDLE
COTTER PIN
DOG REST
SLIDE PLATES
HANDWHEEL, LOWER
LOCKNUT
DOG REST
SPRING


BRACE LINK ASSEMBLY
UPPER BRACE LINK PIN
UPPER BRACE LINK PIN COLLAR
LOWER BRACE LINK PIN
FLANGED BUSHING
HINGE PIN
HINGE PIN COLLAR
PACKING PLUNGER
SPINDLE
3-DOG SPIDER
DOG ADJUSTING BOLT
DOG REST SPRING
DOG REST SLIDE PLATE
CLEVIS PIN AND COTTER PIN
LOCKNUT

Flush Quick Acting Watertight Scuttle



Parts


SPIDER, 4-DOG (for 25" scuttle)
HANDWHEEL, UPPER
HANDWHEEL, LOWER
DOG CAM
DOG REST
DOG REST SPRING
DOG REST SLIDE PLATE
SPINDLE COLLAR SET SCREW
SPINDLE COLLAR
UPPER FLANGED BUSHING
SPINDLE
LOWER FLANGED BUSHING
NOTE: ALL OTHER PARTS IN THIS ILLUSTRATION ARE THE SAME AS RAISED SCUTTLES
SPINDLE
SPINDLE COLLAR
SET SCREW
UPPER FLANGED BUSHING
LOWER FLANGED BUSHING

REVIEW AND SUMMARY

1) What is the door frames metal edge that seats the gasket called?

(Knife edge)

2) How are door frames mated to the bulkhead?

(Bolted or welded)

3) What part make up the hinge assembly for the watertight door; and what additional part makes the hinge assemble unique for the airtight door?

(Hinge pad, hinge blade, hinge pin collar hinge pin washers, yoke washers, yoke washers, hinge pin, airtight door- set screw & lock nut)

4) On an individually dogged watertight door, what are the straight & flanged bushings different size’s?

1” & 1 1/8”

5) What are the three different ways wedges are attached to doors?

(Screwed, Riveted, Welded- formal work package required)

6) What is the most commonly bent dog on a individually dogged watertight hatch?

(Center, Hinge side dog)

THE END